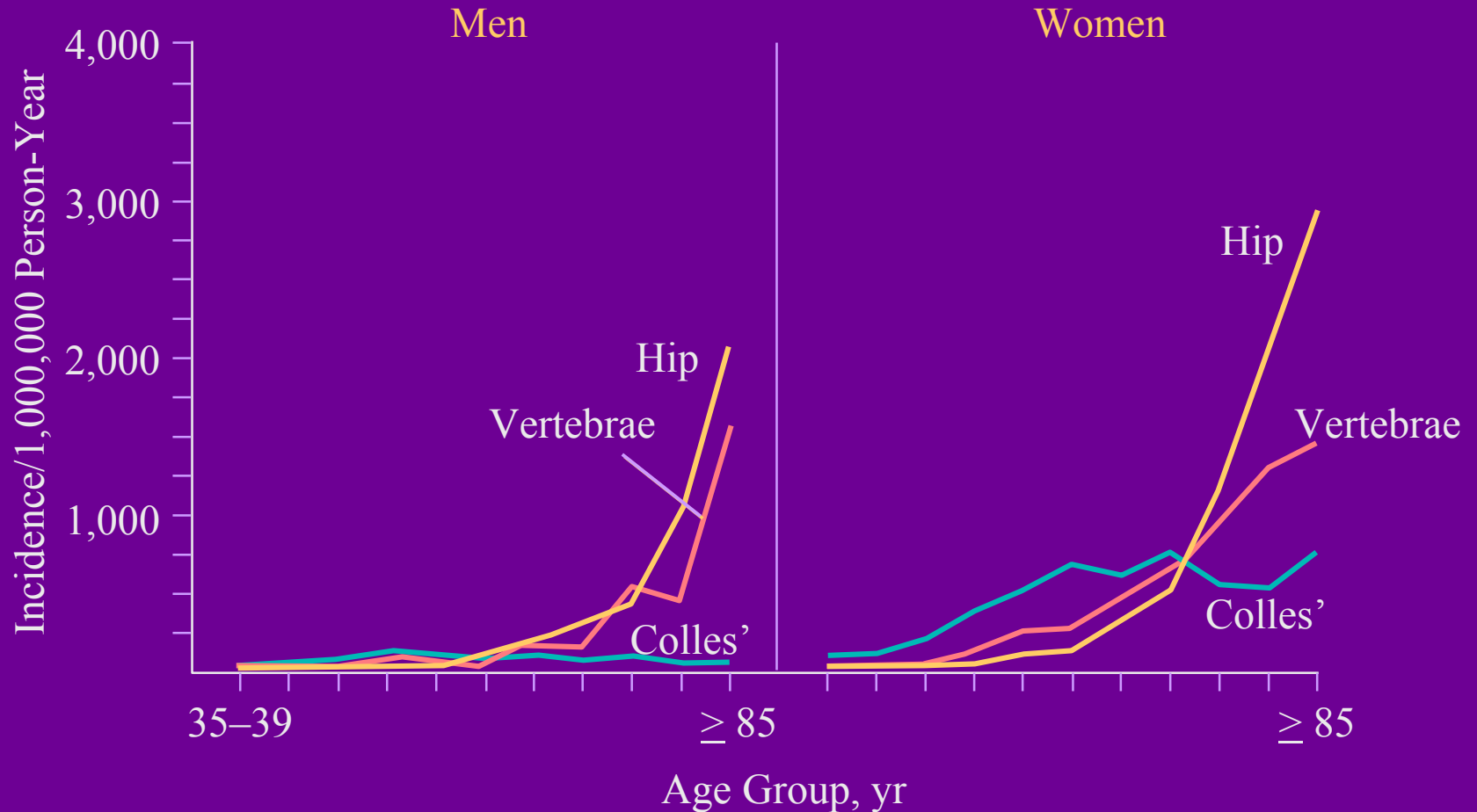


Fractures As a Function of Age



Risk Factors for Osteoporotic fractures

- ◆ **Non-modifiables**
- ◆ **Personal Hx of Fracture as an adult**
- ◆ **Family Hx of fracture**
- ◆ **Caucasian race**
- ◆ **Female sex**
- ◆ **Dementia**
- ◆ **Poor health/frailty**
- ◆ **Potentially modifiable**
- ◆ **Current smoking**
- ◆ **Low body weight (<127 lbs)**
- ◆ **Estrogen deficiency: early menopause, ovariectomy or prolonged amenorrhea**
- ◆ **Low calcium intake**
- ◆ **Alcoholism**
- ◆ **Impaired eyesight**
- ◆ **Recurrent falls**
- ◆ **Inadequate physical activity**
- ◆ **Poor health/frailty**

Diseases associated with increased risk for Osteoporosis

- ◆ Acromegaly
- ◆ Addison's disease
- ◆ Amyloidosis
- ◆ Ankylosing spondylitis
- ◆ COPD
- ◆ Cushing's syndrome
- ◆ Gastrectomy
- ◆ Epidermolysis bullosa
- ◆ Hypogonadism
- ◆ Hemochromatosis
- ◆ Hemophilia
- ◆ Severe liver disease
- ◆ Hyperparathyroidism
- ◆ IDDM
- ◆ Lymphoma, leukemia
- ◆ Multiple sclerosis
- ◆ Plasma cell disorders
- ◆ Nutritional disorders
- ◆ Osteogenesis Imperfecta
- ◆ Pernicious anemia
- ◆ Rheumatoid arthritis
- ◆ Sarcoidosis
- ◆ Thyrotoxicosis
- ◆ Thalassemia
- ◆ Tumor secreting PTHrp

Drugs associated with an increased risk of Osteoporosis

- ◆ Aluminum
- ◆ Anticonvulsants
- ◆ Cigarette smoking
- ◆ Cytotoxic drugs
- ◆ Excessive alcohol
- ◆ Excessive thyroxine
- ◆ Glucocorticoids
- ◆ Adrenocorticotropin
- ◆ GnRH agonists
- ◆ Heparin
- ◆ Coumadin
- ◆ Lithium
- ◆ Premenopausal tamoxifen use

WHO Definitions

- ◆ Normal : T score of +1 to -1.0
- ◆ Osteopenia: T score -1.0 to -2.5
- ◆ Osteoporosis: T score - 2.5 or more
- ◆ Established osteoporosis: women with low bone density and a fracture

Review of Fracture Trials

	X-ray Fx	Clinical Hip Fx	Clinical Spine Fx	Clinical non-spine Fx
Alendronate	++ 56% reduction	++ (FN T=-2.5) 51% reduction	++ , 50%-90% reduction	++ 45-60% reduction
Etidronate	+	NS	NS	NS
Risedronate	++ 51% reduction	++ (FN T=-3.0) 39% reduction	+ 50-85% reduction	++ (39% reduction)
Estrogen	NS	ND	NS	+/-
Raloxifene	++ (50% reduction)	NS	+	NS
Calcitonin	+ (36% reduction at 5 yrs)	NS	NS	NS

Universal Recommendations

- ◆ Advise all patients to obtain an adequate intake of **dietary calcium** :
 - Premenopausal women 1000-1200 mg
 - Postmenopausal Women 1500 mg/day
- ◆ **Vitamin D**
 - 400 IU day
 - 800 IU day in older adults, chronically ill, housebound or institutionalized
- ◆ Regular weight bearing exercise
- ◆ Avoid tobacco use and alcohol use